	N Furnace. Fig. 27	Lyswa Furnace. Fig. 28
Dimensions of Hearth	16X2. 1 =33 m^2	13X2 =26 rn^2
Production per 24 hours . .	f 3,800	2,900
Per sous/re meter	I 62 200 kg	47,400 kg
Coal consumed per 24	f 800	409 pouds
Coal consumed per second .	I 13 000 kg	6,700 kg 0 kg 070
Ratio between weight of coal and	21.1 per cent	16 8 per cent
Gas volume per kilogram of coal burned with 50 per cent	14 m^3 04	9 m^3 89
Gas, volume burned per second	Qo = 2m^3 16	Qo — 0 m^3 78
Gas, volume burned per second at		Q_{1200} = 4 m^3 2
Height of roof above hearth at the right of the strangulation, com-		*hizooo* ~ 0 m 530
Effective height		*0 m ffaff*
Gas, volume per second at *t* = 700° .	Q7oo = 7$m^3$697	
Height of roof at chimney or waste	[illegible]	Q_{700} = 2$m^3$780
Effective heieht	*tn*$_m$*-0 m 90*	*h™ — 0 m 850*

" N " works. To what may this greater fuel consumption be attributed. Evidently to the greater height between the roof and the hearth of these furnaces.

Why was it found necessary at the " N " works to raise the roof to a certain height above the hearth, while at the Lyswa works it was found necessary to lower the roof to accomplish the same result? An examination of the design of the " N" furnace (Fig. 27) leads to a negative conclusion. Indeed, according to Yesmann's formula a furnace will require less combustible wb^n the roof is closest to the hearth. Accordingly the roof should be brought down as low as possible.

The hot gases consist of a mixture of air, combustible gases and the products of their reaction upon each other. The combustion takes place while the hot gafces are passing through the furnace;

C1) The *quality* of the coal is not considered in this computation.